CLAIMS:

1. A method for influencing magnetic particles in a region of action, which method has the following steps:

a) generation of a magnetic field having a pattern in space of its magnetic field strength such that a first sub-zone (301) having a low magnetic field strength and a second sub-zone (302) having a higher magnetic field strength are formed in the region of action, which region of action is situated outside the space surrounding the arrangement having means for generating the magnetic field,

b) changing the position in space of the two sub-zones in the region of action so that the magnetization of the particles changes locally.

2. A method as claimed in claim 1, wherein a magnetic field that is positionally and temporally variable is generated to change the position in space of the two sub-zones in the region of action.

3. A method as claimed in claim 1, having the following further steps:

c) acquiring signals that depend on the magnetization in the region of action, which magnetization is influenced by the change in the position in space,

d) analyzing the signals to obtain information on the spatial distribution of the magnetic particles in the region of action.

4. A method as claimed in claim 3, wherein the signals that are induced in at least one coil by the temporal change in the magnetization in the region of action are received and are analyzed to obtain information on the spatial distribution of the magnetic particles in the region of action.

5. A method as claimed in claim 1, wherein the position in space of the two sub-zones is changed for so long, and at a frequency such, that the region of action heats up.

6. An apparatus for performing the method claimed in claim 1, which apparatus has:

a) an arrangement having means for generating a magnetic field having a pattern in space of its magnetic field strength such that a first sub-zone (301) having a low magnetic field strength and a second sub-zone (302) having a higher magnetic field strength are formed in the region of action, which region of action is situated outside the space surrounding the arrangement having means for generating the magnetic field,

b) means for changing the position in space of the two sub-zones in the region of action so that the magnetization of the particles changes locally.

7. An apparatus as claimed in claim 6, wherein the means for generating the magnetic field comprise a gradient coil arrangement for generating a gradient magnetic field that reverses its direction and has a passage through zero in the first sub-zone of the region of action.

8. An apparatus as claimed in claim 6 having at least two coils arranged concentrically one within the other, through which coils currents flow in opposite directions of circulation in the operating state.

9. An apparatus as claimed in claim 6 having at least one coil and at least one permanent magnet situated inside or outside the coil.

10. An apparatus as claimed in claim 6 having a housing enclosing the arrangement, outside which housing the region of action is situated in front of a side of the housing.

11. An apparatus as claimed in claim 6 having a table above which the region of action is situated.

12. An apparatus as claimed in claim 6 having means for generating at least one temporally variable magnetic field that is superimposed on the gradient magnetic field, for the purpose of displacing the two sub-zones in the region of action.

13. An apparatus as claimed in claim 6 having

c) means for acquiring signals that depend on the magnetization in the region of action, which magnetization is influenced by the change in the position in space,

d) means for analyzing the signals to obtain information on the spatial distribution of the magnetic particles in the region of action.

14. An apparatus as claimed in claim 13 having a coil arrangement for receiving signals induced by the temporal change in the magnetization in the region of action.